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创建于1996年!
Established in 1996!





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SFD系列真空冷冻干燥设备

SFD series vacuum freeze drying equipment

冻干技术的介绍：真空冷冻干燥技术是目前国际上最先进的食品脱水加工工艺，与常规的干燥方式相比，它加工出来的产品具有以下特点：形状与色泽不变，成品呈海绵状无干缩现象，基本保持了产品加工前的状态。成品的复水性好，在短时间内基本可恢复到原状。冻干产品的营养成分基本不流失。

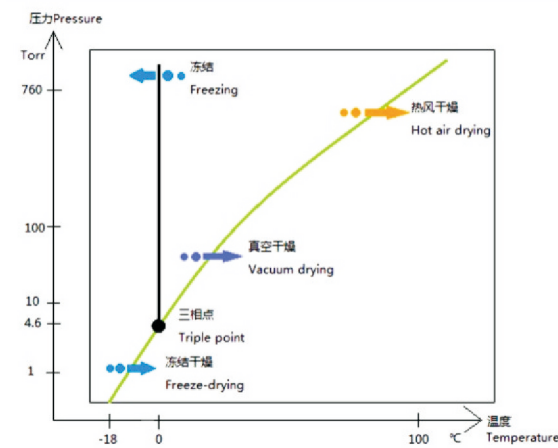
FD technology introduction: vacuum freeze drying technology is the most advanced food drying craft in the world. Compared with the common drying method, the products processed by this technology have following characteristics: no change in shape and color, in sponge structure and no shrink, almost remaining the same condition as fresh product. FD product has a good rehydration nature, it can return to original state in short time, and almost keeps the same nutrition with the fresh product.

冻干设备的应用：冻干设备应用领域广阔，可广泛应用于蔬菜、水果、水产品、肉类、调味品、面食类、生物制品、饮料、各类农产品以及标本等。甚至可应用于陶瓷、化工、石墨烯等行业。

FD equipment application: FD equipment has a wide application. It can be widely used in such fields as vegetables, fruits, aquatic products, meat, condiments, flour products, biological products, beverage, agricultural products and specimen, etc.; it even can be used in such industries as ceramic, chemistry and graphene, etc.

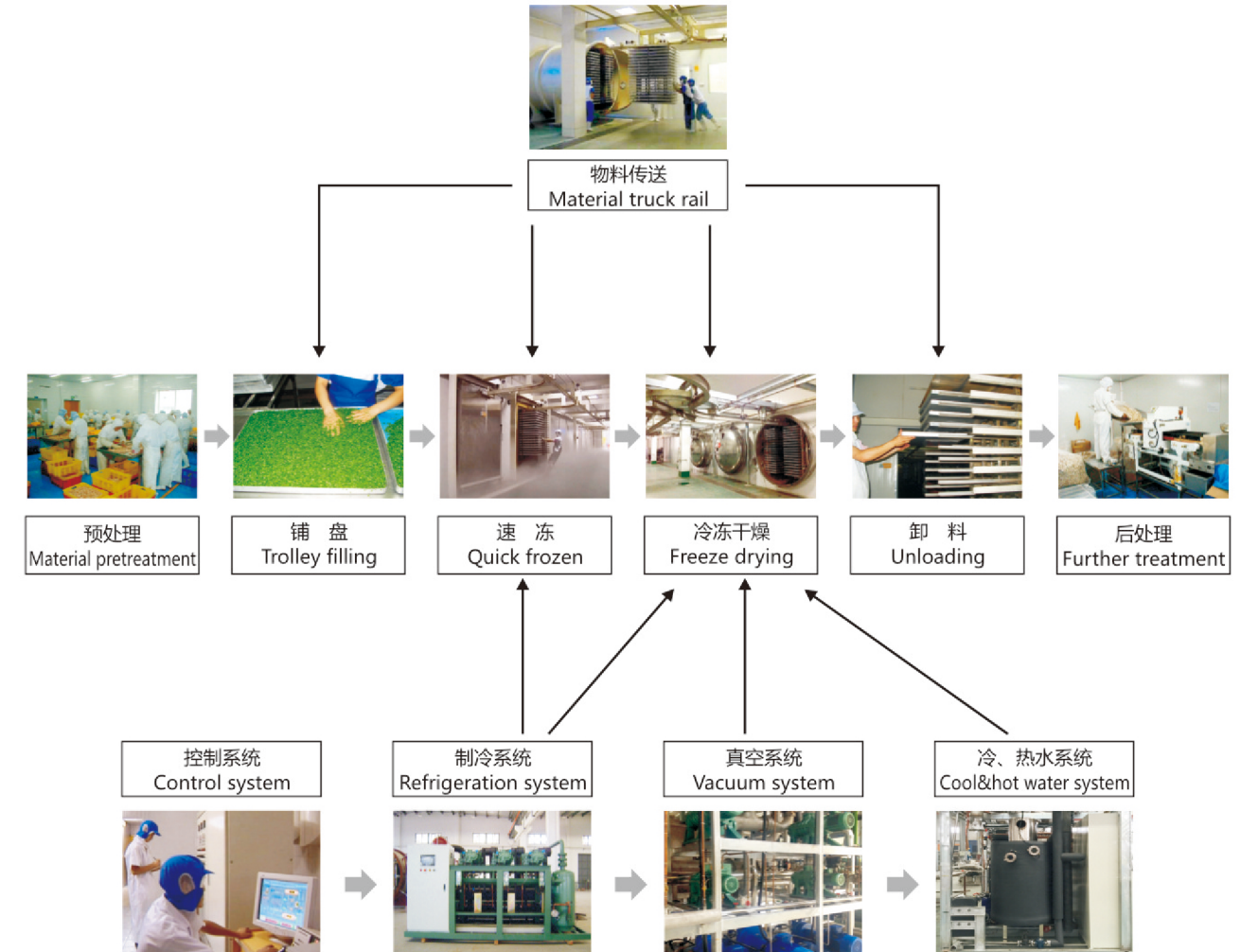
冻干设备的原理：真空冷冻干燥是将已处理过的含水物质，经低温快速冷冻后，在真空和冷冻状态下将物质加热，使物质中的固态冰升华成气态的水汽，在冷阱的作用下，再把气态的水汽凝结成冰，从而达到以除去水分而保存物质的干燥方法。

FD equipment working principle : vacuum freeze drying is a drying method which heats the frozen water-content product, under a condition of vacuum and low temperature, sublimates the moisture in product from solid state to gas state; under the function of cold trap, freezes the moisture in gas state into ice, so as to get rid of the moisture and preserves the product.



SFD冷冻干燥设备系统及工艺流程图

SFD freeze dryer equipment system and flow chart



SFD真空冷冻干燥设备简介：

SFD vacuum freeze dryer summary:

SFD系列冻干机是我公司在上世纪90年代，结合国内外机器的基础上研制出来的新颖冻干机，并于2002年率先在国内推出单台干燥面积280m²的超大型冻干设备，该设备的开发成功，填补了国内无大型冻干设备的空白。公司由此在2004年获得“国家重点新产品”奖和“国家火炬计划项目”证书。客户已遍及国内多个省区，并出口到美国、墨西哥、俄罗斯、捷克、印度、泰国、越南、马来西亚、印尼、尼日利亚等国家。

SFD冻干设备主要包括：预冻系统，干燥罐，真空系统，加热与冷却水或硅油系统，制冷系统，捕水系统，融冰系统，物料传送系统，自动控制和远程监控系统。

经过不断的开发和研究，公司推出了多种形式的冻干设备。冻干面积≤30m²的，根据物料冷冻方式不同，分为一体式（SFD-I）和分体式（SFD-II）两种机型。冻干面积≥50m²的，根据捕水器（冷阱）的捕水方式不同，分为一次性捕水和交替捕水两种机型。为此公司向中国国家知识产权局申请了专利，专利号分别为：ZL2016 2 0912523.8, ZL2016 2 0908065.0, ZL2021 2 1352563.9.

为适应市场需求，2020年公司又推出了SHFD家用型冻干机。

SFD series vacuum freeze dryer is a new developed lyophilizer by our company in 1990s, combined the domestic and abroad technology. We took the lead in launching a huge vacuum freeze dryer whose drying area reached 280m² in 2002. The success of this equipment filled a vacancy that there is no large vacuum freeze dryer in domestic. Because of this, our company won "National Key New Product" award and "National Torch Plan Program" certificate in 2004. Our lyophilizers are spread over many provinces and have exported to many countries like America, Mexico, Russia, Czech, India, Thailand, Vietnam, Malaysia, Indonesia and Nigeria, etc.

SFD vacuum freeze dryer consists of prefreezing system, drying tank, vacuum system, heating and cooling water or silicon oil system, melting ice system, refrigeration system, cold trap system, material transport system, automatic control and remote monitoring system.

With constant development and research, our company has launched various forms of freeze drying equipment. Those freeze drying area ≤ 30m², according to different material freezing method, can be divided into integrated structure (SFD-I) and split structure (SFD-II) two models. Those freeze drying area ≥ 50m², according to different condensing method, can be divided into one-time condensing (single cold trap) and alternate condensing (multi cold traps) two models. Therefore, we applied for patents to CNIPA, the patents numbers are ZL2016 2 0912523.8, ZL2016 2 09 08065.0, ZI202 1 2 1352563.9.

To cater for the market, our company launched SHFD household vacuum freeze dryer in 2020.



SFD冷冻干燥设备主要特点

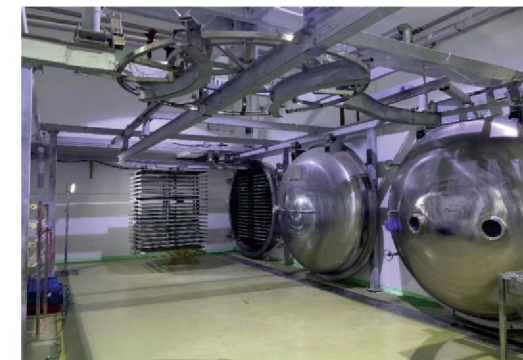
SFD vacuum freeze dryer characteristic



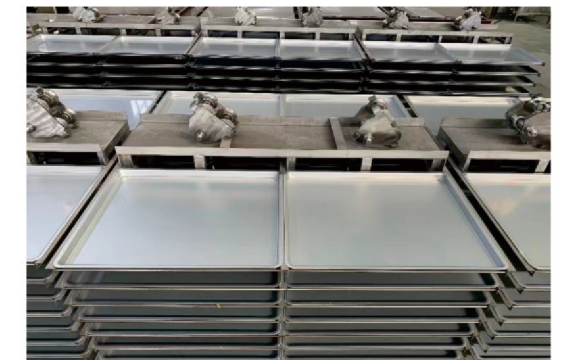
外置式多冷阱交替捕水
External multi-cold trap alternate condensing



负压或常压热水融冰装置
Negative or ordinary pressure hot water de-icing device



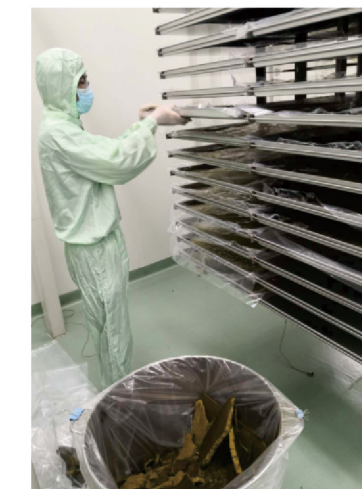
自动变轨装置
Automatic orbit transfer device



一次成型料盘
One-step forming tray



两套维持真空系统
Two sets vacuum maintaining systems



防料盘滑落料车
trolley with anti-tray-slip rod



远程检测控制系统
Remote monitoring control system

SHFD家用型冻干机

SHFD household vacuum freeze dryer



SHFD家用型冻干机技术参数

Main technical parameters of SHFD household freeze drying equipment

参数 Parameters	型号 Model	SHFD-0.4m ²	SHFD-0.6m ²
配置Level		家用高配型Household-High configuration type	家用高配型Household-High configuration type
冻干面积Freeze dried area		0.4m ²	0.63m ²
装料量Capacity		4-6kg	6-9kg
配置内容Equipment parts		主机1台(冻干机), 真空泵及配件一套 One host(Freeze dryer), One set of vacuum pump and accessories	主机1台(冻干机), 真空泵及配件一套 One host(Freeze dryer), One set of vacuum pump and accessories
托盘尺寸Trays size		200*400*20mm	250*500*20mm
物料托盘Tray number		5个 5pcs	5个 5pcs
捕水量Ice capacity		5kg	7kg
冷阱温度Cold trap temperature		-50°C	-50°C
真空度(空载) Vacuum(No-load)		≤5pa	≤5pa
整机功率及电压Power		1300w,220V,50HZ Voltage can be customized	2450w,220V,50HZ Voltage can be customized
主机尺寸(mm)及重量Size(mm) and Weight		600*500*800, 130kg	730*640*1100, 160kg
适用环境Applicable environment		环境温度≤30°C Ambient temperature ≤ 30 °C	环境温度≤30°C Ambient temperature ≤ 30 °C

备注：外形有设计改进的，以最终设计为准。
Note: The shape has design improvement, subject to the final design.



SFD-I系列真空冷冻干燥设备

SFD-I series vacuum freeze dryer



SFD-I系列真空冷冻干燥设备主要技术参数

Main technical parameters of SFD-I series vacuum freeze drying equipment

参数 Parameters	型号 Model	SFD-I-2m ²	SFD-I-5m ²	SFD-I-20m ²	SFD-I-30m ²
干燥仓形式 Drying pot shape		方形/圆形square/round	方形/圆形square/round	方形/圆形square/round	方形/圆形square/round
干燥面积 Drying area(m ²)		2m ²	5m ²	20m ²	30m ²
捕水能力(批次) Condensing capacity(batch)		≥26kg	≥65kg	≥300kg	≥450kg
料盘尺寸 Size of material tray(mm)		650*550*30 (最终设计根据加热板尺寸确定, 保证冻干面积) (final design according to heating plate size, ensures freeze drying area)			
料盘数量 Number of material tray (pcs)		6	14	56	84
料盘材质 Tray material		不锈钢/铝合金SUS/AL alloy	不锈钢/铝合金SUS/AL alloy	不锈钢/铝合金SUS/AL alloy	不锈钢/铝合金SUS/AL alloy
整机尺寸(L*W*H) Overall dimension(mm)		2400*1200*2400	3800*1600*2200	5300*1600*2650	7400*1600*2700
工作真空度 Operation vacuum (pa)		1~200			
加热板温度 Heating plate temperature (°C)		-60°C~+90°C			
加热板材质 Heating plate material		304不锈钢/6063铝合金SUS304/6063 AL alloy			
加热板数量 Number of heating plate (pcs)		6+1	7+1	14+1	14+1
加热板介质 Heating medium		导热油 conduction oil			
装机功率 Power required (kw)		10.5	17	48	76
整机重量 Machine weight (kg)		1300	4500	7500	9500



SFD-II系列冷冻干燥设备常用规格

SFD-II series vacuum freeze dryer normal models



SFD-II-0.5m²



SFD-II-1m²



SFD-II-5m²



SFD-II-10m²



SFD-II-25m²



SFD-II-50m²



SFD-II-100m²



SFD-II-125m²



SFD-II-200m²

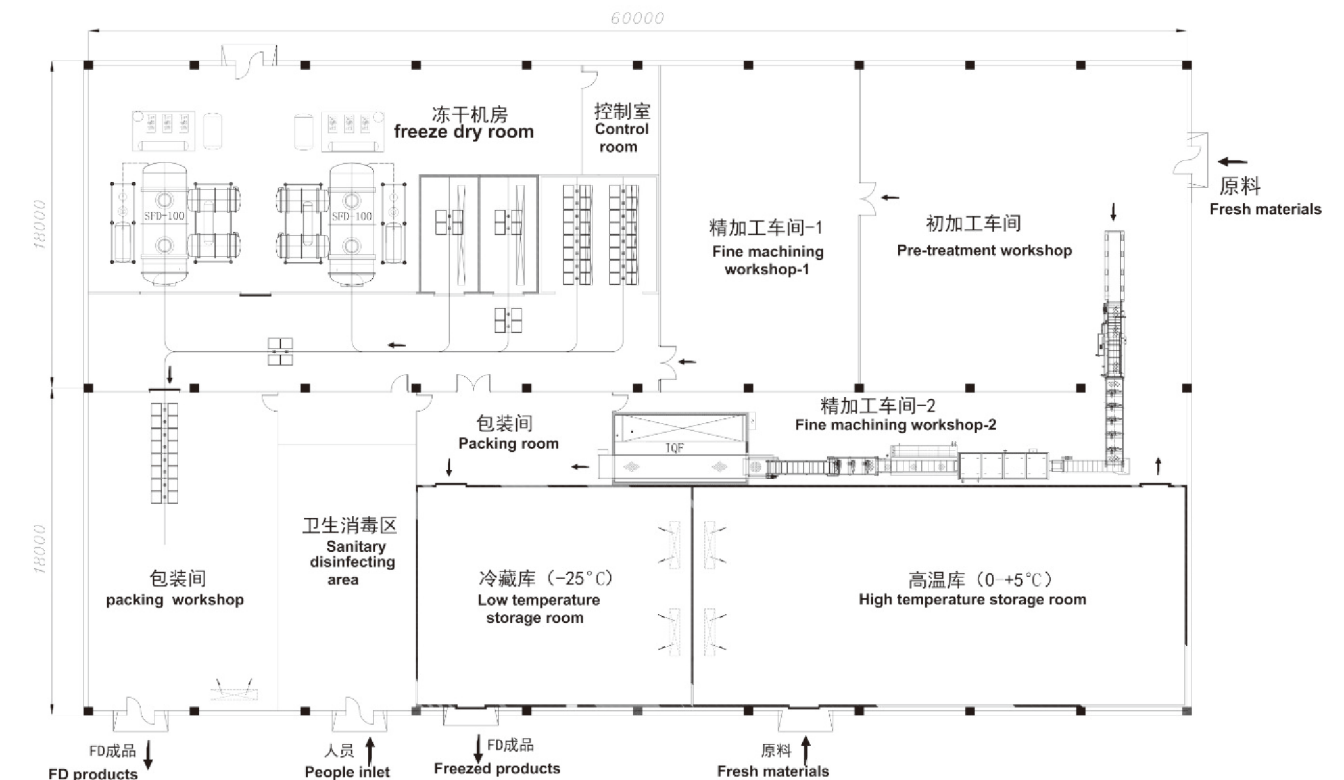


SFD-II系列真空冷冻干燥设备主要技术参数

Main technical parameters of SFD-II series vacuum freeze drying equipment

参数 Parameters	型号 Model	SFD-II-0.5	SFD-II-1	SFD-II-5	SFD-II-10	SFD-II-25	SFD-II-50	SFD-II-100	SFD-II-125	SFD-II-200	
干燥面积 Drying area(m ²)		0.5	1	5.5	10.4	25	50	100	125	200	
料盘尺寸 Size of material tray(mm)		500*340*35	750*340*35	540*635*35	540*870*35	540*635*35					
料盘数量 Number of material tray (pcs)		3*2	4*2	16*2	22*2	72*2	144*2	288*2	360*2	576*2	
干燥罐体尺寸 Size of drying pot (mm)		Φ500*1400	Φ500*1750	Φ1200*2300	Φ1600*2900	Φ1800*4400	Φ2400*4100	Φ2400*6800	Φ2400*8200	Φ2400*12300	
速冻库尺寸 (L*W*H) Freezer dimension (mm)		1000*740*770	1210*980*700	2800*970*1200	2230*1850*2300	3000*2800*3000	3800*3600*3600	6000*3600*3600	7400*3600*3600	11000*3600*3600	
整机外形尺寸 (L*W*H) Overall dimension (mm)		1900*1300*1800	2600*1250*1800	4400*2300*2000	7400*2300*2400	/	/	/	/	/	
工作真空 Operation vacuum (pa)		13.3~200									
加热板温度 Heating plate temperature (°C)		常温 ~ +120°C Normal temperature ~ +120°C									
加热板介质 Heating medium		软化水 Soften water									
电加热 Electric heating (kw)		2	3	15	24	45	96	/	/	/	
蒸汽耗量 Steam consumption (kg/h, 0.7mpa)		/	/	/	/	70	160	320	400	540	
耗冷量 (+35°C/-35°C) Cold load (kw)		1.5	2.4	11	18	45	110	180	225	360	
装机功率 Power required (kw)		8.5	10.4	35	63.2	64+	130+	245	287	404	

备注: 1) 含2m²以上的料盘均为一次性冲压成型。
 2) 含50m²以上规格冻干机捕水形式均为外置交替捕水, 也可根据用户需要提供一次性捕水方式。
 3) 能耗数据仅供参考, 依不同配置方式略有变化。
 Note: 1) Trays for models larger than 2m² (including 2m²) are press forming at one time.
 2) Water catching method in models larger than 50m² (including 50m²) is externally alternative catching, single cold trap customized.
 3) Energy consumption for reference only, it changes slightly according to different configurations.



冻干、速冻车间示意图 Vacuum freeze dry, quick freeze workshop diagram